Before the

Federal Communications Commission

Washington, D.C. 20554

In the Matter of	)	
Establishing the Digital Opportunity Data Collection	)	WC Docket No. 19-195
Modernizing the FCC Form 477 Data Program	)	WC Docket No. 11-10

COMMENTS OF CONNECTED2FIBER

Connected2Fiber (C2F) files these comments in response to the Federal Communications Commission ("FCC") Report and Order and Second Notice of Proposed Rulemaking released on August 6, 2019 seeking comment on improving broadband data, additional technical standards for fixed broadband reporting, the use of crowdsourcing, incorporating location information into the Digital Opportunity Data Collection, improving mobile broadband and voice data and sunsetting the Form 477 broadband deployment data collection.

Connected2Fiber is the Industry Cloud for Connectivity, providing authoritative, location-based insight & applications to network owners and operators. The Connected World platform details and displays deep, trusted location-based insight and empowers users to leverage that insight to automate go-to-market processes including identification of total addressable market, participation, network planning, account targeting, and product pricing. More information regarding Connected2Fiber can be found on the web at www.connected2fiber.com.

I. Improving Broadband Data; Additional Technical Standard for Fixed Broadband Reporting

In Section IV, A, 1, Paragraph 78, the FCC sought comment on what other steps the Commission and USAC can take to help fixed providers file accurate data as part of the new data collection.

Connected2Fiber believes the market has the expertise, knowledge and tools to develop polygons depicting fixed broadband coverage. The lack of a policy is the missing ingredient needed, not technology or capabilities. The policy created previously was done so without precision and the new policy once implemented will and can be complied with for both large and small providers given the common place tools used within the industry for location management and sharing, such as Connected2Fiber's The Connected World application, used by network operators to share location specific serviceability today for over 230 million locations in the US and around the world. Connected2Fiber believes that establishing clear policy with instructions and a help desk is more than adequate to enable the industry to accomplish this reporting responsibility on their own leveraging current industry tools such as Connected2Fiber.

In paragraph 79 the FCC sought comment on whether Commission staff should prescribe rules for reporting fixed wired broadband deployment that will provide consistently reliable results for similarly-situated filers.

Connected2Fiber believes Commission staff should prescribe rules for reporting fixed wired broadband deployment that will provide consistently reliable results for similarly-situated filers. The policies should be detailed and clear in purpose and structure to enable the market to leverage the GIS technologies available to all small, medium and large service providers and market tools that would enable the proper reporting. Reporting historically has not been inaccurate because of a lack of capabilities, but rather compliance with what was requested by the Commission to be submitted by filers. Connected2Fiber believes firmly that a specific and well-articulated policy will leave no room to misunderstand the reporting objectives and needs to be specific to the location level, as service providers already maintain records for internal processes around network plant management, provisioning and installation processes and how companies share across the wholesale ecosystem leveraging tools like those offered by Connected2Fiber.

Compliance to the reporting standard and defining clearly what is needed, such as there is currently service in place, or would the FCC like to see what is currently in place in addition to what is directly in

front of the property with access rights to serve a location that is close to, but off the provider's network . The method of focusing on reporting the polygon of the parcel covered will yield the highest degree of accurate results that is not overly burdensome and misleading by focusing on a structure by structure view. College campuses, for example typically have their own network connecting the many buildings, and the service providers deliver network to specific points of demarcation, capturing every structure not served by a service provider on campus would underrepresent reality that they are served by the college themselves.

Another example of structure reporting not adding value would be on the residential market where a home owner has broadband and a garage is separated from the home and has no service from the provider, but rather the home owner ran CAT 5 cabling and enables the garage with Wi-Fi from the main connection at the house. However, when reporting on a parcel basis, you would see the providers are present or they are not present and have a more accurate view of what the Commission is trying to accomplish.

In Paragraph 80, the FCC also sought comment on establishing standards for reporting coverage polygons for terrestrial fixed wireless broadband service.

Connected2Fiber believes Commission staff should establish standards for reporting coverage polygons for terrestrial fixed wireless broadband service. There are fundamental differences in fixed and wireless technologies for coverage and delivery, but the reporting requirement and delivery should be the same clear specific policy, identifying which parcel polygon's can be served, including from the fixed wireless coverage and those fixed providers to the higher standard of understanding fixed wireless coverage impediments such as other structures, trees or terrain. Connected2Fiber believes the Commission should adopt standards for reporting mobile broadband deployment, and the Commission should require terrestrial-fixed wireless providers to report broadband deployment using similar standards, showing not just where they could serve if they have clear line of site, but showing where they know they can potentially serve.

In paragraph 81 the FCC sought comment on whether fixed broadband providers should include latency levels along with the other parameters in reporting their coverage polygons.

Connected2Fiber does not believe that fixed broadband providers should include latency levels as it does not sit at the heart of the FCC's objective to create complete coverage of broadband services.

In paragraph 82. FCC sought comment on what steps the Commission can or should take to support the production of high-quality data and ways the Commission can provide incentives to improve the quality of the data filed.

Connected2Fiber believes the single most important steps that the FCC should take in this matter to ensure accurate and complete broadband reporting takes place is to establish a clear set of reporting deliverables and actively communicate and train the industry on the new standards. The technology already exists as demonstrated in the wholesale serviceability market, the automated wholesale pricing market, the right of way locating market and the OSP engineering markets. All of these categories of the industry are identifying, managing and communicating location specific coverage in the market already today. Aligning to the new standard the FCC establishes will be simple once it is clear what the objective and structure is adopted.

In paragraph 83. the FCC sought comment on the best method (or mix of methods) to ensure the submission of accurate fixed broadband deployment data, including the plans that USAC must develop for corroborating and spot-checking data submitted by fixed providers.

Connected2Fiber believes that leveraging the existing crowdsourced data through speed tests, and encouraging the open source use of that data to corroborate the data submitted into the FCC by the fixed and mobile broadband providers is a great step for all of the industry to ensure the best data is utilized. The sources and technology already exist and promoting their use to the public and collaborating with service providers to share and promote the speed test data will help achieve this new objective of ensuring accuracy from a third-party perspective.

Connected2Fiber uses this technology to enable a QA process in the network market intelligence it collects on the behalf of its customers and finds it to be a suitable process for QA checks. The FCC further sought comment on penalties related to inaccurate data, as well as how to handle situations in which the filer is negligent (but not intentional) in submitting inaccurate data. Connected2Fiber believes that the penalty should be significant to deter providers from submitting what they would like the market to see regarding their coverage, but rather correctly submitting where they currently are providing service. The crowdsourced data is not enough validation of incorrect coverage information submitted by a provider, but rather a specific review process, and or a third-party quality auditor inspecting routes, locations and coverage should be initiated if the crowdsourced data identify any anomalies.

In paragraph 84 the FCC sought comment on additional measures they can adopt to meet the objective of ensuring that the value of the data collection is fully realized by the Commission, stakeholder, and ratepayers.

Connected2Fiber believes that adding a simple mechanism to flag schools, healthcare and other key categories to be collected in the reporting would aid in the value creation of the Digital Opportunity Data Collection for E-Rate, and other federal initiatives.

II. Improving Broadband Data; Incorporating Location Information into the Digital Opportunity data Collection

In Section IV, 3, paragraph 99, the FCC agreed that there are likely benefits to incorporating nationwide location data into the Digital Opportunity Data Collection and proposes to adopt such an approach, informed by comments on how USAC can collect and incorporate such data. The FCC sought what data does USAC need and how could it get access to them. The FCC also stated that it believes that broadband coverage polygons submitted by service providers could be overlaid on nationwide location data in order to precisely identify the homes and small businesses that have and do not have access to broadband services, and sought comment on this view.

Connected2Fiber believes that this location specific data already exists and is available in the commercial markets for the use by USAC to overlap provider submissions to understand households and businesses with or without coverage. The primary concern and challenge the FCC staff needs to consider is the privacy rights and the security requirements surrounding the knowledge of network, location and household and businesses. There is on-going review and implementation of methods to protect the privacy of individuals from the onslaught of hackers or marketing firms.

Connected2Fiber believes that an internal confidential and secure platform for policy makers is a logical and important decision, vs an open system for the public to understand explicitly where a network provider has their assets located and who they serve. There are a lot of domestic entities, as well as foreign entities that would like network asset information easily available and we believe the FCC has a responsibility to meets its objectives on reporting but balance the security needs of the nation's digital infrastructure.

In paragraph 101 the FCC sought comment on Alexicon's claim that a broad definition of location lowers both the reporting burden for providers and the underlying cost of identifying locations and also sought comment on what kinds of locations we should include as broadband-serviceable and how to define the location of a parcel (e.g. as the centroid of a parcel or as the location of a building on a parcel). Additionally, the FCC sought comment on alternatives for defining a broadband-serviceable location.

Connected2Fiber believes that defining the parcel as the location to be the fairest, and most intelligent choice in enabling a new reporting standard to add real value. Diving into the structures within a parcel is not of high value given the use of internal networks and Wi-Fi on residential and commercial properties that have more than one structure. The centroid is the most important point, to provide context, however by collecting the parcel polygon, you can connect that to an address, centroid point and enable search queries that intersect anywhere in that parcel polygon to identify serviceable.

In paragraph102 sought comment on the treatment of each apartment within a multi-tenant location. Connected2Fiber believes reporting for the multi-tenant location should be at the parcel level, not at the apartment level. If broadband is provided to the parcel then it is within the capabilities of the residential users to obtain broadband service(s)in a cost-effective manner

In paragraph 103. the FCC proposes to have the database record a single point, defined by latitude and longitude, for that location. and sought comment on this approach.

Connected2Fiber believes that the point is a good and important data point to capture and report on. The polygon centroid of the parcel or building footprint is the ideal choice for that point. We believe submitting the polygon for the spatial coverage along with the data on the point, capabilities of speed and date made available would be ideal elements to capture.

In paragraph 104 the FCC sought comment on how they would approach the quality of such a broadband serviceable location database and how best to account for these and other possible challenges in building an accurate location-based database.

Connected2Fiber believes the best way to validate coverage completeness is to partner with the municipal governments whom are ultimately also vested in this process and in direct control of property tax processes and data. That data will identify what is needed and not needed to be served and once again, there are commercial solutions like Connected2Fiber already in the market.

In paragraph 105 the FCC sought comment on whether the less granular county-level housing estimates the Census publishes yearly could be used as a data source for dataset verification and whether or how the FCC can make use of such data sources. The FCC also sought input on whether there are other sources we should be aware of that could be useful as a check of a broadband-addressable location database.

Connected2Fiber believes this low cost and effective way to estimate coverage is a good tool to implement, taking the county level housing units and making it simple to measure given the consistency

and ubiquity of this data. If the Commission seeks to benchmark to the address data, Connected2Fiber believes that leveraging the USPS relationship to the FCC and enabling that as a key benchmark for completeness also adds value.

In paragraph 106 the FCC sought comment on how to stratify such a sample (are there distinct categories in the data—urban, suburban, rural, residential, business, Tribal, non-Tribal—that warrant distinct samples?), and also how to evaluate the quality of the sampled data. Connected2Fiber does not feel this would be the right choice. There is too much valid location data already in existence to need or want to do this statistical sampling and building a site verified model that will ultimately miss the precision that matters for meeting the Commission's goals in this proceeding.

In paragraph 108 the FCC sought comment on the use of two distinct data products used by the Broadband Mapping Coalition: a database of broadband-serviceable locations and a "lookup" tool for integrating provider addresses data into the locations database. Additionally, the FCC sought comment on whether the lookup tool would be necessary given our adoption of availability-map reporting in the accompanying Report and Order.

Connected2Fiber does not believe the lookup tool is needed to be created to add value to this purpose if the reporting of the polygon, points and data are being done. The providers will have their data, the FCC will gain the reporting of coverage needed and the visualization of that map will deliver the necessary insight to allocate capital and policy decisions to influence the build out of more broadband in the right locations.

In paragraph 109 the FCC was asking if there were determinations made by the Broadband Mapping Coalition as part of its pilot that the Commission should approach differently.

Connected2Fiber believes that the core of the effort by the FCC is set forth by policy and the building of a labor and capital intensive map is not needed, as the technology exists already and in a bid

process if that is the path selected, qualified applicants would be able to meet the location, collection, presentation and security needs of the FCC and its constituents.

In paragraph 110 the FCC sought comment on whether, when, and how, after establishing a location-based fabric, USAC should implement incorporating the fabric into the Digital Opportunity Data Collection, and if USTelecom's proposal that the creation of a location-based fabric run in parallel with the establishment of the online portal for our polygon-based approach. As noted by the FCC, ACA argued that fixed providers not accepting Universal Service support should not be required to "publicly disclose individual location information since such information is considered to be competitively-sensitive and the FCC sought comment on ACA's proposal.

Connected2Fiber believes that there are significant investments in industry standards already, including those developed by TM Forum and the MEF that accomplish everything in the location fabric thought process proposed by USTelecom and are not needed to be duplicated.

In paragraph 111 the FCC sought comment on the extent to which any location-based database should be fully accessible by the public.

Connected2Fiber believes that the precision desired and needed to implement this next phase of the Commission's policy it is critical to ensure it is implemented in a secure and closed view at the granular level, except for a single query at a time views of individual parcels or aggregate views visualized and made available online shading colors for service areas that are available and are not available, as well as speeds. However, Connected2Fiber strongly encourages the FCC to consider the security implications if people can identify all of the network locations specifically and at bulk, and the individuals and businesses at those locations identifiable with the data provided by the filers.

III. Conclusion

Connecected2Fiber appreciates the opportunity to provide comments in this proceeding. The Commission has developed a solid base for improving the quality and accuracy of broadband data to be collected. As noted in our comments above, Connected2Fiber raised concerns regarding the protection of network asset data as well as individual data, especially given on-going concerns over data privacy, as well as providing infrastructure data to entities that may use the data for purposes not intended by the Commission, or to even damage critical network infrastructure. Connected2Fiber is available to speak with the Commission staff related to our comments and Connected2Fiber's business operations that we believe would greatly assist the Commission in meeting its policy goals of obtaining, validating and presenting data in a format that allows consumers to know where broadband services are actually available and served by a broadband provider.

Respectfully Submitted,

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